

WHAT IS CLAIMED IS :

1. An apparatus for charging constituent components of concrete into a mixing vessel, the apparatus comprising:
 - a discharge hopper having an outlet;
 - a substantially vertically-disposed cement discharge pipe substantially centered within the discharge hopper;
 - a water inlet in the discharge hopper; and
 - an aggregate feeding mechanism having an outlet above the discharge hopper.
2. The apparatus according to claim 1, wherein the cement discharge pipe comprises an upper rigid section and a flexible bottom end section, the bottom end section downwardly projecting into the outlet of the discharge hopper.
3. The apparatus according to claim 2, wherein the upper rigid section of the cement discharge pipe is made of steel.
4. The apparatus according to claim 3, wherein at least a portion of the upper steel section is covered by a removable wear liner.
5. The apparatus according to claim 1, wherein the discharge hopper comprises at least one removable wear liner.
6. The apparatus according to claim 1, wherein the water inlet is located in the main section of the discharge hopper.
7. The apparatus according to claim 1, wherein the aggregate feeding mechanism comprises a conveyor belt.

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8. The apparatus according to claim 1, further comprising means for vertically moving the outlet of the discharge hopper with reference to the loading hopper of the mixing truck.
9. The apparatus according to claim 8, wherein the outlet of the discharge hopper comprises a vertically movable funnel-shaped hood.
10. The apparatus according to claim 8, wherein the hood is made of a rigid material.
11. The apparatus according to claim 1, further comprising a dust collector to collect airborne dust particles coming out of the outlet of the discharge hopper and the loading hopper.
12. The apparatus according to claim 1, wherein the dust collector comprises a retractable dust hood operatively connected to an actuator.
13. The apparatus according to claim 12, wherein the dust hood encloses a space in fluid communication with a vacuum device.
14. The apparatus according to claim 1, further comprising a substantially horizontally-disposed plate selectively movable between a first position where the plate is located under the outlet of the discharge hopper, and a second position where the plate is away from the outlet of the discharge hopper.
15. The apparatus according to claim 14, wherein the plate is mechanically connected to an actuator.
16. The apparatus according to claim 15, wherein the plate is movable sideways.
17. A method of charging constituent components of concrete through a loading hopper into a mixing vessel, the method comprising the steps of :

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supplying water and aggregate to a discharge hopper having an outlet aligned with an inlet to a mixing vessel

discharging cement powder through a substantially vertically-disposed cement discharge pipe substantially centered within the discharge hopper whereby aggregates, water and cement are discharged from the outlet of the discharge hopper to the mixing vessel.

- 18 The method according to claim 17, further comprising:
initiating the feeding of the aggregates and water of the cement.
- 19 The method according to claim 17, further comprising:
lowering the outlet of the discharge hopper when it is aligned with the loading hopper of the mixing truck.
- 20 The method according to claim 17 further comprising:
covering the outlet of the discharge hopper and the loading hopper for collecting airborne dust particles when feeding aggregates, water and cement into the discharge hopper.
- 21 The method according to claim 17, further comprising:
moving a substantially horizontally-disposed plate under the outlet of the discharge hopper for protecting a mixing truck traveling under the discharge hopper.